

02-28-07

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THE UNITED STATES PATENT AND TRADEMARK OFFICE

: Yuji NOMURA, et al.
 U. S. Patent No. : **7,035,259**
 Serial No. : 09/800,150
 Issued : 04/25/2006
 For : LABEL SWITCH NETWORK SYSTEM

February 27, 2007

Director of the U.S. Patent and
 Trademark Office
 P.O. Box 1450
 Alexandria, VA 22313-1450

Certificate

MAR 02 2007

REQUEST FOR A CERTIFICATE OF CORRECTION **of Correction**

SIR:

We request a Certificate of Correction under 37 C.F.R. 1.322, to correct Claim 3 which was incorrectly listed at column 17, line 38, as: "... **detects die user request** ..." Please change the same to read: "... **detects the user request** ..."

Please also correct claim 7 which was incorrectly listed at column 18, line 15, as: "... **newly generated packer flows** ..." Please change the same to read: "... **newly generated packet flows** ..."

Please also correct claim 7 which was incorrectly listed at column 18, line 20, as: "... **packer flows** ..." Please change the same to read: "... **packet flows** ..."

Please also correct claim 7 which was incorrectly listed at column 18, line 23, as: "... **transferring he new packer** ..." Please change the same to read: "... **transferring the new packet** ..."

Please also correct claim 8 which was incorrectly listed at column 18, line 30, as: "... **the policy sewer has** ..." Please change the same to read: "... **the policy server has** ..."

Please also correct claim 8 which was incorrectly listed at column 18, line 31, as: "... **to transfer The new** ..." Please change the same to read: "... **to transfer the new** ..."

Please also correct claim 8 which was incorrectly listed at column 18, line 34, as: "... **as a working pat and** ..." Please change the same to read: "... **as a working path and** ..."

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Please also correct claim 10 which was incorrectly listed at column 18, line 54, as: “ . . . a **plurality of different packer flows . . .**” Please change the same to read: “ . . . a **plurality of different packet flows . . .**”

Please also correct claim 10 which was incorrectly listed at column 18, line 60, as: “ . . . **the plurality of packer flows . . .**” Please change the same to read: “ . . . **the plurality of packet flows . . .**”

Please also correct claim 11 which was incorrectly listed at column 19, line 23, as: “ . . . **by the policy serves . . .**” Please change the same to read: “ . . . **by the policy server . . .**”

Please also correct claim 16 which was incorrectly listed at column 19, line 61, as: “ . . . **sewer detects newly generated packet flows . . .**” Please change the same to read: “ . . . **server detects newly generated packet flows . . .**”

Please also correct claim 16 which was incorrectly listed at column 20, line 3, as: “ . . . **the new packer flows . . .**” Please change the same to read: “ . . . **the new packet flows . . .**”

Please also correct claim 17 which was incorrectly listed at column 20, line 8, as: “ . . . **the new packer flows . . .**” Please change the same to read: “ . . . **the new packet flows . . .**”

Please also correct claim 18 which was incorrectly listed at column 20, line 23, as: “ . . . **the policy sewer of claim 17 . . .**” Please change the same to read: “ . . . **the policy server of claim 17 . . .**”

Please also correct claim 20 which was incorrectly listed at column 20, line 61, as: “ . . . **ingress node sets un the layer 2 pats . . .**” Please change the same to read: “ . . . **ingress node sets up the layer 2 paths . . .**”

Please also correct claim 20 which was incorrectly listed at column 20, line 63, as: “ . . . **egress, base on an instruction . . .**” Please change the same to read: “ . . . **egress, based on an instruction . . .**”

Please also correct claim 20 which was incorrectly listed at column 20, line 65, as: “ . . . **the IP packers with reference to . . .**” Please change the same to read: “ . . . **the IP packets with reference to . . .**”

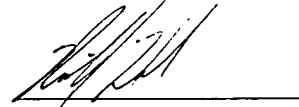
Please also correct claim 21 which was incorrectly listed at column 21, line 13, as: “ . . . in accordance wit an IP address” Please change the same to read: “ . . . in accordance with an IP address”

Attached, please find a copy of the Amendment filed on December 14, 2005, which was filed contemporaneously with a Petition For Extension of Time to ensure that the Amendment would be entered.

This was due to an error made by the USPTO.

Any fee due as a result of this paper, may be charged to Deposit account No.50-1290.

Respectfully submitted,



Nathan D. Weber
Reg. No. 50.958

Customer No.: 026304
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Docket No.: FUJY 17.297

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO : 7,035,259 +

DATED : April 25, 2006

INVENTOR(S): Yuji Nomura, et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Claim 3 column 17, line 38: "-detects die user request-" should be changed to "--detects the user request--".

Claim 7 column 18, line 15: "-newly generated packer-" should be changed to "--newly generated packet--".

Claim 7 column 18, line 20: "-packer flows-" should be changed to "--packet flows--".

Claim 7 column 18, line 23: "-transferring he new packer-" should be changed to "--transferring the new packet--".

Claim 8, column 18, line 30: "-the policy sewer has-" should be changed to "--the policy server has--".

Claim 8, column 18, line 31: "-to transfer The new-" should be changed to "--to change the new--".

Claim 8, column 18, line 34: "-as a working pat and-" should be changed to "--as a working path and--".

Claim 10, column 18, line 54: "-a plurality of different packer flows-" should be changed to "--a plurality of different packet flows--".

Claim 10, column 18, line 60: "-the plurality of packer flows-" should be changed to "--the plurality of packet flows--".

Claim 11, column 19, column 19, line 23: "-by the policy serves.-" should be changed to "--by the policy server.--".

MAILING ADDRESS OF SENDER:

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DATED : April 25, 2006
INVENTOR(S) : Yuji Nomura, et al.



It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Claim 16 column 19, line 61: "-sewer detects newly generated packet flows-" should be changed to "--server detects newly generated packet flows--".

Claim 16 column 20, line 3: "-the new packer flows-" should be changed to "--the new packet flows--".

Claim 17 column 20, line 8: "- new packer flows-" should be changed to "-- new packet flows--".

Claim 18 column 20, line 23: "-the policy sewer of claim 17,-" should be changed to "--the policy server of claim 17,--".

Claim 20, column 20, line 61: "-ingress node sets un the layer 2 pats-" should be changed to "--ingress node sets up the layer 2 paths--".

Claim 20, column 20, line 63: "-base on an instruction-" should be changed to "--based on an instruction--".

Claim 20, column 20, line 65: "-the IP packers with reference to-" should be changed to "--the IP packets with reference to--".

Claim 21, column 21, line 13: "-in accordance wit an IP address-" should be changed to "--in accordance with an IP address--".

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Facsimile

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1. Examiner Brian D. Nguyen	USPTO - GAU 2661 Re: 09/800,150 Confirmation No.: 4621	1-571.273.8300	

Date	Client/Matter Number
12/14/2005	FUJY 17.297 (100794-11416)
From	Attorney Email Address
Brian S. Myers	<u>Brian.myers@kattenlaw.com</u>
Phone	Fax
212.940.8703	212.940.8986

Total number of pages, including cover letter: 19
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Comments

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16 pages - A M E N D M E N T

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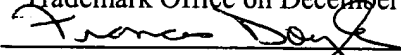
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Frances Doyle

Attorney Docket No.: FUJY 17.297 (100794-11416)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventors: Yuji NOMURA, et al.
Confirmation No.: 4621
Serial No.: 09/800,150
Filed: March 5, 2001
Title: LABEL SWITCH NETWORK SYSTEM
Examiner: Brian D. Nguyen
Group Art Unit: 2661

December 14, 2005

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

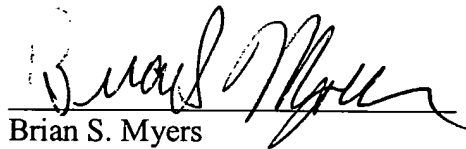
PETITION FOR EXTENSION OF TIME

Sir:

Applicant requests that the time for taking action in this case be extended pursuant to 37 CFR 1.136(a) for one month.

Any fee due with this paper, including the extension fee in the amount of \$120.00, may be charged to Deposit Account No. 50-1290.

Respectfully submitted,



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CUSTOMER NUMBER 026304

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Docket No.: FUJY 17.297 (100794-11416)

BSM:fd



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Frances Doyle

Attorney Docket No.: FUJY 17.297 (100794-11416)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Respectfully submitted,



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Frances Doyle
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Attorney Docket No.: FUJY 17.297 (100794-11416)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventors: Yuji NOMURA, et al.
Confirmation No.: 4621
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Title: LABEL SWITCH NETWORK SYSTEM
Examiner: Brian D. Nguyen
Group Art Unit: 2661

December 14, 2005

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT

SIR:

Applicant hereby petitions for a three-month extension of time, a petition pursuant to 37 C.F.R. 1.136(a) and a requisite fee being enclosed.

In response to the Office Action dated September 1, 2005 please amend the subject application as follows:

MAR - 5 2007

AMENDMENTS TO THE CLAIMS:

1.(currently amended): A label switch network system having a plurality of label switch nodes interconnected by network links where layer 2 paths are set up by specified routes between the plurality of label switch nodes from a network ingress to a network egress, comprising:

an ingress node which is disposed at the network ingress of the label switch network that transfers packets corresponding to packet flows based on labels, and which selects ~~and sets up~~ layer 2 paths for transferring the packets with reference to the header or payload information of the packets; and

a policy server connected to the ingress node and instructing ~~that instructs~~ the ingress node to set up the layer 2 paths in compliance with policy control protocols when at least one of a user makes a request or a status change in the network arises;

wherein the ingress node sets up the layer 2 paths between the plurality of label switch nodes from the network ingress to the network egress, based on an instruction given by the policy server, ~~and controls the ingress node and the plurality of label switch nodes.~~

2.(original): The label switch network system according to Claim 1, wherein the policy server comprises:

a unit for detecting the user request and the status change in the network,

a unit for determining, when transferring the packets in the ingress node, whether existing layer 2 paths are selected to transfer the packets or new layer 2 paths following appropriate routes are to be newly set up, and

a unit for calculating appropriate routes for the layer 2 paths including quality assurance parameters.

3.(currently amended): The label switch network system according to Claim 1, wherein the ingress node comprises:

a unit for notifying the policy server of the user request or the status change in the network when the ingress node itself detects the user request or the status change in the network and , or when the ingress node collects the user request or the status change in the network from any of the plurality of label switch nodes; and

the policy server comprises:

a unit for instructing the ingress node to set up the layer 2 paths for transferring the packets corresponding to newly generated packet flows, in response to notices sent by the ingress node.

4.(original): The label switch network system according to Claim 1, wherein each of the plurality of label switch nodes comprises:

a unit for routing the packets, and a unit for setting up the layer 2 paths passing through routes specified by IP addresses contained in the packets; and

the policy server comprises:

a unit for specifying one of the plurality of label switch nodes through which a layer 2 path will pass through in accordance with the IP address corresponding to the one of the label switch nodes.

5.(original): The label switch network system according to Claim 1, wherein when a plurality of the layer 2 paths exist through which packet flows can pass, new packet flows are generated based on a user request or a detected status change in the network, and

the policy server has a unit that responds to resource utilization conditions of each physical line as collected beforehand, by searching for routes that will keep the resource utilization conditions of each physical line balanced when adding the new packet flows, and a unit for instructing the ingress node to set up the layer 2 paths that can communicate the new packet flows generated in response to the user request or the detected status change in the network.

6.(original): The label switch network system according to Claim 1, wherein the ingress node comprises:

a unit for collecting and managing utilization conditions of the layer 2 paths, and

a unit for selecting from among a plurality of layer 2 paths through which certain packet flows can pass, the layer 2 paths appropriate for transferring the certain packet flows based on the utilization conditions of the plurality of the layer 2 paths.

7.(original): The label switch network system according to Claim 6, wherein the policy server detects newly generated packet flows generated in response to a user request or a status change in the network, and the policy server comprises:

a unit for instructing the ingress node to set up a plurality of the layer 2 paths which transfer the newly generated packet flows, and

a unit for instructing the ingress node to select the layer 2 paths appropriate for either the packets or the packet flows as a unit so that transferring the new packet flows will not cause any imbalance in the utilization conditions of the plurality of layer 2 paths with each other.

8.(original): The label switch network system according to Claim 1, wherein when a plurality of the layer 2 paths exist through which packet flows can pass, new packet flows are generated by a user request or a detected status change in the network, and the policy server has a unit for searching for at least two different routes for new layer 2 paths to transfer the new packet flows, for generating the new layer 2 paths for transferring the new packet flows, and for designating one of the new layer 2 paths as a working path and the other as a spare path in accordance with resource utilization conditions of each physical line as collected beforehand, and has a unit for instructing the ingress node to switch from the working path to the spare path, based on a judgment at one of the plurality of the label switch nodes when said one of the plurality of the label switch nodes detects a failure in the working path, and

the ingress node has a unit for switching the working path to the spare path when the ingress node itself detects a failure in the working path.

9.(original): The label switch network system according to Claim 8, wherein the policy server has a unit for instructing the ingress node to use the spare path for other traffic when the working path is normally operating, and to stop the other traffic from using the spare path and to make the spare path accommodate traffic which the working path was carrying when a failure arises in the working path.

10.(original): The label switch network system according to claim 1, wherein one of the layer 2 paths can transfer packets corresponding to a plurality of different packet flows, and wherein the policy server and the plurality of label switch nodes each have

a unit for defining logical groups to which a plurality of packet flows belong and group identifiers for identifying the groups thereof, and

a unit for specifying the plurality of packet flows belonging to the group by the group identifiers when one of the layer 2 paths is switched; and

the policy server has a unit for giving instruction to the ingress node so that packet flows and the layer 2 paths match with each other, making use of the group identifiers when one of the layer 2 paths is switched.

11.(currently amended): A policy server providing centralized management for a label switch network system having a plurality of label switch nodes interconnected by network links where layer 2 paths are set up by specified routes between the plurality of label switch nodes from a network ingress to a network egress, and

an ingress node disposed at the network ingress of the label switch network that transfers packets corresponding to packet flows based on labels, and which selects ~~and sets up~~ layer 2 paths for transferring the packets with reference to the header or payload information of the packets; the policy server comprising:

a receive processing unit for detecting user requests or status changes in the network, and

a path creation and transmitting unit responsive to the receive processing unit, for instructing the ingress node to set up the layer 2 paths in compliance with policy control protocols, via the plurality of label switch nodes;

wherein the ingress node sets up the layer 2 paths between the plurality of label switch nodes from the network ingress to the network egress, based on an instruction given by the policy server.

12.(original): The policy server of claim 11, further comprising:

a unit for determining, when transferring the packets in the ingress node, whether existing layer 2 paths are selected to transfer the packets or new layer 2 paths following appropriate routes are to be newly set up, and

a unit for calculating appropriate routes for the layer 2 paths including quality assurance parameters.

13.(original): The policy server of claim 11, wherein the ingress node notifies the policy server of the user request or the status change in the network, and

the policy server further comprising:

a unit for instructing the ingress node to set up the layer 2 paths for transferring the packets corresponding to newly generated packet flows, in response to notices sent by the ingress node.

14.(original): The policy server of claim 11, wherein the packets are IP packets and contain IP addresses, and

the policy server comprises:

a unit for specifying one of the plurality of label switch nodes through which a layer 2 path will pass through in accordance with the IP address corresponding to the one of the label switch nodes.

15.(original): The policy server of claim 11, wherein the packets are IP packets and a plurality of the layer 2 paths through which IP flows can pass exist, new IP flows are generated based on a user request or a detected status change in the network, and

the policy server further comprises:

a unit that responds to resource utilization conditions of each physical line as collected beforehand, for searching routes that will keep the resource utilization conditions of each physical line balanced when adding the new IP flows, and

a unit for instructing the ingress node to set up the layer 2 paths that can transfer the new IP flows generated in response to the user request or the detected status change in the network.

16.(original): The policy server of claim 11, wherein the policy server detects newly generated packet flows generated based on a user request or a status change in the network, and the policy server further comprises:

a unit for instructing the ingress node to set up a plurality of the layer 2 paths which transfer the newly generated packet flows, and

a unit for instructing the ingress node to select the layer 2 paths appropriate for either the packets or the packet flows as a unit so that transferring the new packet flows will not cause any imbalance in the utilization conditions of the plurality of layer 2 paths with each other.

17.(original): The policy server of claim 11, wherein when a plurality of the layer 2 paths exist through which packet flows can pass, new packet flows are generated by a user request or a detected status change in the network, and the policy server further comprises:

a unit for searching for at least two different routes for new layer 2 paths to transfer the new packet flows, for generating the new layer 2 paths for transferring the new packet flows, and for designating one of the new layer 2 paths as a working path and the other as a spare path in accordance with resource utilization conditions of each physical line as collected beforehand, and

a unit for instructing the ingress node to switch from the working path to the spare path, based on a judgment of at one of the plurality of the label switch nodes when the at one of the plurality of the label switch nodes detects a failure in the working path.

18.(original): The policy server of claim 17, further comprises:

a unit for instructing the ingress node to use the spare path for other traffic when the working path is normally operating, and to stop the other traffic from using the spare path and to make the spare path accommodate traffic which the working path was carrying when a failure arises in the working path.

19.(original): The policy server of claims 11, wherein the packets are IP packets, and the policy server further comprises:

a unit for defining logical groups, having group identifiers, to which a plurality of IP flows belong when one of the layer 2 paths transfers the IP packets corresponding to a plurality of different IP flows,

a unit for specifying the plurality of IP flows belonging to the group by the group identifiers when one of the layer 2 paths is switched, and

a unit for giving instruction to the ingress node so that IP flows and the layer 2 paths match with each other, using the group identifiers when one of the layer 2 paths is switched.

20.(currently amended): A method for setting up and selecting layer 2 paths for transferring IP packets in a label switch network system having a plurality of label switch nodes interconnected by network links where layer 2 paths are set up by specified routes between the plurality of label switch nodes from a network ingress to a network egress, and an ingress node disposed at the network ingress of the label switch network system that transfers the IP packets corresponding to IP flows based on labels; the method comprising the steps of:

detecting user requests and status changes in the network,

determining, when transferring the IP packets in the ingress node, whether existing layer 2 paths are selected to transfer the IP packets or new layer 2 paths following appropriate routes are to be newly set up,

calculating appropriate routes for the layer 2 paths including quality assurance parameters,

instructing the ingress node to set up the layer 2 paths in compliance with policy control protocols, wherein the ingress node sets up the layer 2 paths between the plurality of label switch nodes from the network ingress to the network egress, based on an instruction given by a policy server; and

transferring the IP packets with reference to the header or payload information of the packets.

21.(currently amended): The method of claim 20, further comprising the steps of:

notifying [[a]] the policy server of the user requests or the status changes in the network, and

in the policy server, instructing the ingress node to set up the layer 2 paths for transferring the IP packets corresponding to newly generated IP flows, in response to the notifying step.

22.(original): The method of claim 21, further comprising the step of:

in the policy server, specifying one of the plurality of label switch nodes through which a layer 2 path will pass through in accordance with an IP address corresponding to the one of the label switch nodes.

23.(original): The method of claim 21, further comprising the steps of:

generating new IP flows based on a user request or a detected status change in the network,

balancing resource utilization conditions of each physical line by searching for routes that will keep the resource utilization conditions of each physical line balanced when adding the new IP flows when a plurality of the layer 2 paths exist through which IP flows can pass, and

instructing the ingress node to set up the layer 2 paths that can transfer the new IP flows generated.

REMARKS

Claims 1-23 are pending. Claims 10 and 19 are deemed to be allowable.

Claims 1-9, 11-18 and 20-23 stand rejected.

The independent claims have been amended herein to clarify applicant's claimed invention. For example in applicant's claim 1 a policy server is connected to the ingress node and instructing the ingress node to set up the layer 2 paths and the ingress node sets up the layer 2 paths between the plurality of label switch nodes from the network ingress to the network egress, based on an instruction given by the policy server.

Claim Rejections

Claims 1-7, 11-16 and 20-23 are rejected under 35 U.S.C. § 102(e) as anticipated by Gibson et al. (U.S. 6,680,943)(hereinafter Gibson) and claims 8-9 and 17-18 are rejected as unpatentable under 35 U.S.C. § 103(a) over Gibson in view of McAllister (previously cited).

It is respectfully submitted that the cited references, Gibson and McAllister, do not disclose or teach singly or in combination at least the following features of the independent claim 1, 11 or 20.

In applicant's claimed invention the policy server is instructing the ingress node to set up the layer 2 paths in compliance with policy control protocols when at least one of a user makes a request or a status change in the network arises and the ingress node sets up the layer 2 paths between the plurality of label switch nodes from the network ingress to the network egress, based on an instruction given by the policy server.

Therefore with applicant's claimed invention the policy server needs only to deliver to the ingress node the control information for the flow control (for example, setting of a path, collection of the information regarding the situation) for each node constituting the path.

Gibson in contrast describes that a plurality of node stages are provided for flow control, and that the flow control is performed while the control information is delivered to each node in the label switch network. Each node is responsible for the path setting.

Gibson discloses selecting and setting routes for the path in the label switch network, wherein a plurality of routes are selected within the label switch network by using an “INVITE message” or an “OK message” of SIP (Session Initiation Protocol).

Candidates routes for selection are transmitted to a node for flow controlling, and that node determines the route. The condition of the network required for preparing the route candidates is managed within the label switch network by utilizing a “REGISTER message” of SIP.

For example, in Gibson, the network nodes CM (31) and EP (11) shown in Fig. 1 thereof have the function of extracting a plurality of paths and determining their order of priority, and an “Admin Server” determines a path to be set from the candidates extracted in CM and EP based on the order of priority and the like (see Column 20, line 15 – Column 21, line 15 of Gibson).

Thus, Gibson requires the processing by a plurality of kinds of low control nodes (“Admin Server”, CM and EP) and the complicated protocol processing for selecting a route for the path, and consequently, the cost required by the nodes becomes great. Further, with the Gibson reference, since the plurality of path candidates are extracted and selected, the “Admin Server” requires a waiting time until it receives the candidates for the plurality of routes for the path, and the CM and EP requires a processing time for transmitting/receiving a message of the SIP (see Column 25, lines 15-20), and , consequently, it is inevitable that the processing efficiency and the processing speed are lowered.

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In the result, the present invention is so configured that the direct flow control for each node in the label switch network is performed by the ingress node, wherein the policy server gives the instruction to only the ingress node of the label switch network, and, in addition, it is suffice to collect the information from only the ingress node, so that for the node for flow control, only a singly node of the policy server is sufficient. Thus, with the present invention, the flow control is performed efficiently and at a low cost.

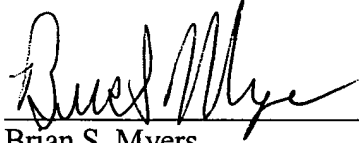
On the contrary, the Gibson reference is so configured that plurality of node stages are provided for flow control, and that the flow control is performed while the control information is delivered to each node in the label switch network. Thus, an overhead for flow control including setting of a path, etc., becomes great, which, in turn, results in cost increase. Specifically, the Gibson reference does not disclose or teach the configuration of the present invention, wherein the ingress node is a base for performing the flow control of the label switch network, and the flow control of each node in the label switch network is performed by the policy server by communicating with only its ingress node.

Each of the dependent claims provides at least the distinguishing features as pointed out above. Accordingly, the present invention is distinguishable from the Gibson and McAllister references. Further, with the present invention, the time required for determining the route of the path is only the processing time in the policy server, and the time for transmitting/receiving a message in each network node and its waiting time are not involved.

In view of the remarks set forth above, this application is in condition for allowance which action is respectfully requested. However, if for any reason the Examiner should consider this application not to be in condition for allowance, the Examiner is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper may be charged to Deposit Account No. 50-1290.

Respectfully submitted,



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